ARCH ELECTRONICS CORP.

Encapsulated DC-DC Converter

SH10 SERIES 10 Watts

KEY FEATURES

- Power Module for PCB Mountable
- High Efficiency and Reliability
- 2:1 Input Range
- Single and Dual Output
- Regulated Output
- Low Ripple and Noise
- 3-Years Product Warranty

ELECTRICAL SPECIFICATIONS

Model No. (Single Output)	SH10-12-3.3S	SH10-12-5S	SH10-12-12S	SH10-12-15S	SH10-12-24S
Input Voltage (V.DC.)	12V (9-18V)	12V (9-18V)	12V (9-18V)	12V (9-18V)	12V (9-18V)
Output Voltage (V.DC.)	3.3V/2500mA	5V/2000mA	12V/830mA	15V/670mA	24V/416mA
Efficiency (typ.)	82%	83%	86%	86%	86%
Capacitor Load (max)	2200μF	2200μF	560μF	470μF	100μF

Model No. (Single Output)	SH10-24-3.3S	SH10-24-5S	SH10-24-12S	SH10-24-15S	SH10-24-24S
Input Voltage (V.DC.)	24V (18-36V)	24V (18-36V)	24V (18-36V)	24V (18-36V)	24V (18-36V)
Output Voltage (V.DC.)	3.3V/2500mA	5V/2000mA	12V/830mA	15V/670mA	24V/416mA
Efficiency (typ.)	82%	85%	86%	86%	86%
Capacitor Load (max)	2200μF	2200μF	560μF	470μF	100μF

Model No. (Single Output)	SH10-48-3.3S	SH10-48-5S	SH10-48-12S	SH10-48-15S	SH10-48-24S
Input Voltage (V.DC.)	48V (36-75V)	48V (36-75V)	48V (36-75V)	48V (36-75V)	48V (36-75V)
Output Voltage (V.DC.)	3.3V/2500mA	5V/2000mA	12V/830mA	15V/670mA	24V/416mA
Efficiency (typ.)	82%	85%	86%	86%	86%
Capacitor Load (max)	2200μF	2200μF	560μF	470μF	100μF

Model No. (Single Output)		SH10-12-3.3S SH10-24-3.3S SH10-48-3.3S	SH10-12-5S SH10-24-5S SH10-48-5S	SH10-12-12S SH10-24-12S SH10-48-12S	SH10-12-15S SH10-24-15S SH10-48-15S	SH10-12-24S SH10-24-24S SH10-48-24S
Max Output Wattage (W)		10W				
Input	Input Filter	π type				
Output	Voltage (V.DC.)	3.3	5	12	15	24
	Voltage Accuracy	±2%				
	Current (mA) max	2500	2000	830	670	416
	Line Regulation (LL-HL) (typ.)	±0.5%				
	Load Regulation (10-100%) (typ.)	±3%	±1%	±1%	±1%	±1%
	Minimum Load	0%				
	Ripple	50 mV max.	1% max.			
	Noise	50 mV max.	1% max.			
	Switching Frequency	300KHz				
Protection	Over Power Protection	Above 105% Rated Output Power				
	Short Circuit Protection	Current limit, auto-recovery				
Isolation	Voltage	1600 VDC.				
	Resistance	10^8 ohms				
	Capacitance	1000 pF				
Environment	Operating Temperature	-25°C…+60°C (at Full Load)				
	Storage Temperature	-55°C…+105°C				
	Case Temperature	+100°C max.				
	Temperature Coefficient	±0.02% Per°C				
	Humidity	95% RH				
	MTBF	>800,000 h @ 25°C (MIL-HDBK-217F)				
Physical	Dimension (L x W x H)	1.25 x 0.8 x 0.44 Inches (31.8 x 20.3 x 11.2 mm) Tolerance ±0.5 mm				
	Case Material	Nickel-Coated Copper with Non-Conductive Base, Six-side shielded.				
	Weight	20 g				
	Cooling Method	Free-air convection				

1.All specifications valid at normal input voltage, full load and +25°C after warm-up time unless otherwise stated.

2.Ripple & Noise are measured at 20MHz of bandwidth with 0.1UF & 47UF parallel capacitor.

SH10 SERIES 10 Watts

Model No. (Dual Output)	SH10-12-5D	SH10-12-12D	SH10-12-15D
Input Voltage (V.DC.)	12V (9-18V)	12V (9-18V)	12V (9-18V)
Output Voltage (V.DC.)	±5V / ±1000mA	±12 / ±416mA	±15 / ±333mA
Efficiency (typ.)	83%	86%	86%
Capacitor Load (max)	±1200μF	±330μF	±120μF

Model No. (Dual Output)	SH10-24-5D	SH10-24-12D	SH10-24-15D
Input Voltage (V.DC.)	24V (18-36V)	24V (18-36V)	24V (18-36V)
Output Voltage (V.DC.)	±5V / ±1000mA	±12 / ±416mA	±15 / ±333mA
Efficiency (typ.)	83%	87%	86%
Capacitor Load (max)	±1200μF	±470μF	±330μF

Model No. (Dual Output)	SH10-48-5D	SH10-48-12D	SH10-48-15D
Input Voltage (V.DC.)	48V (36-75V)	48V (36-75V)	48V (36-75V)
Output Voltage (V.DC.)	±5V / ±1000mA	±12 / ±416mA	±15 / ±333mA
Efficiency (typ.)	82%	87%	86%
Capacitor Load (max)	±1200μF	±470μF	±330μF

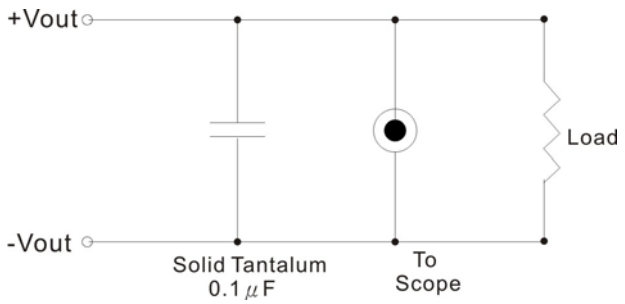
Model No. (Dual Output)		SH10-12-5D SH10-24-5D SH10-48-5D	SH10-12-12D SH10-24-12D SH10-48-12D	SH10-12-15D SH10-24-15D SH10-48-15D
Max Output Wattage (W)		10W		
Input	Input Filter	L-C type		
Output	Voltage (V.DC.)	±5	±12	±15
	Voltage Accuracy	±2%		
	Current (mA) max	±1000	±416	±333
	Line Regulation (LL-HL) (typ.)	±0.5%		
	Load Regulation (10-100%) (typ.)	±1%	±1%	±1%
	Minimum Load	0%		
	Ripple	<0.2% Vout +20mV max (Vp-p)		
	Noise	<0.5% Vout +50mV max (Vp-p)		
	Switching Frequency	300KHz		
Protection	Over Power Protection	Works over 120% of rating and recovers automatically.		
	Short Circuit Protection	Current limit, auto-recovery		
Isolation	Voltage	1600 VDC.		
	Resistance	10^8 ohms		
	Capacitance	1000 pF		
Environment	Operating Temperature	-25°C…+60°C (at Full Load)		
	Storage Temperature	-55°C…+105°C		
	Case Temperature	+100°C max.		
	Temperature Coefficient	±0.02% Per°C		
	Humidity	95% RH		
	MTBF	>800,000 h @ 25°C (MIL-HDBK-217F)		
Physical	Dimension (L x W x H)	1.25 x 0.8 x 0.44 Inches (31.8 x 20.3 x 11.2 mm) Tolerance ±0.5 mm		
	Case Material	Nickel-Coated Copper with Non-Conductive Base, Six-side shielded.		
	Weight	20 g		
	Cooling Method	Free-air convection		

1.All specifications valid at normal input voltage, full load and +25°C after warm-up time unless otherwise stated.

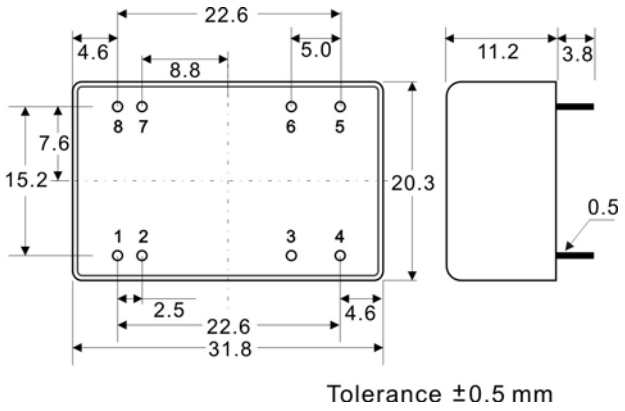
2.Ripple & Noise are measured at 20MHz of bandwidth with 0.1UF & 47UF parallel capacitor.

OUTPUT NOISE

The output noise is measured with 0.1μF tantalum capacitor



MECHANICAL DIMENSION (Top View)

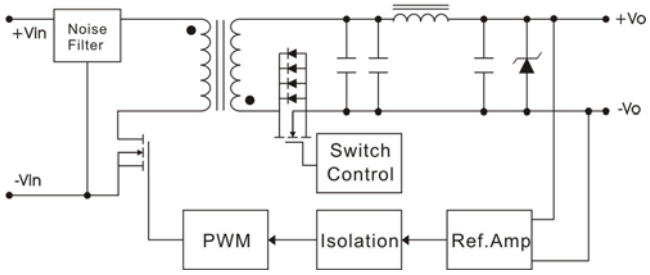


Tolerance ±0.5 mm

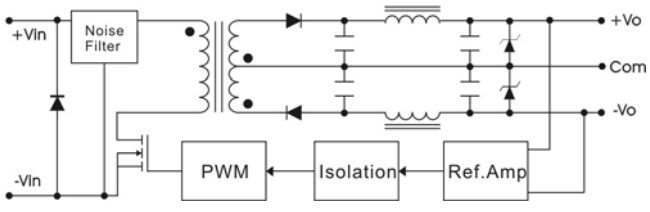
PIN#	Single	Dual
1	-VIN	-VIN
2	-VIN	-VIN
3	NO PIN	COMMON
4	NC	-VOUT
5	+VOUT	+VOUT
6	-VOUT	COMMON
7	+VIN	+VIN
8	+VIN	+VIN

BLOCK DIAGRAM

Single Output



Dual Outputs



DERATING